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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,693	03/24/2004	Hiroshi Nakata	1052-04	4406

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EXAMINER	
ROE, JESSEE RANDALL	
ART UNIT	**PAPER NUMBER**
1793	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/807,693	NAKATA ET AL.	
	Examiner	Art Unit	
	Jessee Roe	1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5,7,17,19,21,23 and 25-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5,7,17,19,21,23 and 25-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5 February 2008 has been entered.

Status of the Claims

Claims 1, 3, 5, 7, 17, 19, 21, 23 and 25-27 are pending wherein claims 2, 4, 6, 8-16, 18, 20, 22, and 24 are canceled and claim 27 is new.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 5, 17, 21 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizaki et al. (US 3,849,209).

In regards to claim 1, Ishizaki et al. ('209) disclose a hot rolled steel plate and strip having superior low temperature toughness and weldability with a composition

relative to that of the instant invention as shown in the table below (col. 1, line 12-17 and col. 2, lines 20-60).

Element	From Instant Claims (mass percent)	Ishizaki et al. ('209) (mass percent)	Overlap (mass percent)
C	about 0.005 – about 0.04	0.005 – 0.15	0.005 – 0.15
Si	about 0.05 – about 0.30	0 – 0.60	0.05 – about 0.30
Mn	about 0.50 – about 2.0	0.70 – 2.0	0.70 – 2.0
Al	about 0.001 – about 0.10	0 – 0.08	about 0.001 – 0.08
Nb	about 0.001 – about 0.1	0.01 – 0.15	0.01 – about 0.1
V	about 0.001 – about 0.1	0 – 0.2	about 0.001-about 0.1
Ti	about 0.001 – about 0.1	0 – 0.2	about 0.001– about 0.1
Cu	0 – about 0.50	0 – 1	0 – about 0.50
Ni	0 – about 0.50	0 – 1	0 – about 0.50
Mo	0 – about 0.50	0	0
Fe	balance	balance	balance

With respect to the limitations regarding phosphorus, sulfur and nitrogen, Ishizaki et al. ('209) do not specify that it is necessary to contain any phosphorus, sulfur, or nitrogen in the steel. Ishizaki et al. ('209) disclose the presence of unavoidable impurities (col. 2, lines 39-61) and it would be expected that the claimed amounts of phosphorus, sulfur, and nitrogen would be within the "unavoidable impurities" disclosed by Ishizaki et al. ('209).

The Examiner notes that the compositions of the steel alloy disclosed by Ishizaki et al. ('209) overlap the compositions of the instant invention, which is prima facie evidence of obviousness. MPEP 2144.05 I. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed amounts of carbon, silicon, manganese, aluminum, niobium, vanadium, titanium, copper, and nickel of a steel alloy from the amounts disclosed by Ishizaki et al. ('209) because

Ishizaki et al. ('209) disclose the same utility throughout the disclosed ranges.

With respect to the limitation that the steel would be "for a high strength electric resistance welding pipe", the Examiner notes that this recitation would not limit the structure of the steel and therefore has considered this recitation an intended use of the steel composition. MPEP 2111.02 II.

With respect to the compositional formula in claim 1 "wherein Pcm represented by the following equation (1) is 0.17 or less: Pcm = (%C) + (%Si)/30 + ((%Mn) + (%Cu))/20 + (%Ni)/60 + (%Mo)/7 + (%V)/10 Equation (1)", it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, Takalatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of carbon, silicon, manganese, copper, nickel, molybdenum and vanadium would appear to require no more than routine investigation by those ordinary skilled in the ad. In re Austin, et al., 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of carbon, silicon, manganese, copper, nickel, molybdenum, and vanadium from the steel alloys disclosed by Ishizaki et al. ('209) because Ishizaki et al. ('209) teach the same utility throughout the disclosed ranges.

With respect to the claimed ratio of niobium being from 5 to about 80%, Ishizaki et al. ('209) disclose that one-third of the total added amount of niobium would precipitate (col. 3, lines 35-63).

With respect to the recitation "the hot-rolled steel strip is composed of bainitic ferrite as a primary phase at a content of about 95 percent by volume or more and having a yield strength of at least 560 MPa", Ishizaki et al. ('209) disclose wherein the steel would be comprised of uniform and very fine ferrite grains and with some upper bainite (col. 5, lines 12-15). Furthermore, Ishizaki et al. ('209) disclose that the processing of the steel alloy would include heating to a temperature higher than 1200°C; finish rolling at a temperature between Ar_3 and 850°C; and coiling in the temperature range of between 680°C and 500°C, which would be substantially similar to that of the instant invention (col. 2, line 62 - col. 3, line 17 and claims 1 and 3). Therefore, a steel strip composed of bainitic ferrite as a primary phase at a content of about 95 percent by volume or more and a yield strength of at least 560 MPa would be expected. MPEP 2112.01 I.

In regards to claim 5, Ishizaki et al. ('209) disclose wherein less than 1 weight percent or less chromium would be added to the steel (col. 2, lines 20-60).

With respect to the compositional formula in claims 5 and 7 "wherein Pcm represented by the following equation (2) is 0.17 or less: Pcm = (%C) + (%Si)/30 + ((%Mn) +(%Cu) + (%Cr))/20 + (%Ni)/60 + (%Mo)/7 + (%V)/10 Equation (2)", it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, Takalatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of carbon, silicon, manganese, copper,

chromium, nickel, molybdenum and vanadium would appear to require no more than routine investigation by those ordinary skilled in the ad. In re Austin, et al., 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of carbon, silicon, manganese, copper, chromium, nickel, molybdenum, and vanadium from the steel alloys disclosed by Ishizaki et al. ('209) because Ishizaki et al. ('209) teach the same utility throughout the disclosed ranges.

In regards to claim 17, see the rejection of claim 1. With respect to the limitation that the steel would have a CTOD value of 0.25 mm or more in claim 17, the Examiner notes that CTOD is a measure of toughness. Ishizaki et al. ('209) does not specify the CTOD value of the steel, but Ishizaki et al. ('209) disclose that the steel would have a high toughness (col. 2, lines 20-60), therefore the Examiner asserts that the steel of Ishizaki et al. ('209) would inherently have the claimed CTOD value.

With respect to the limitation that the steel would be "for a high strength electric resistance welding pipe", the Examiner notes that this recitation would not limit the structure of the steel and therefore has considered this recitation an intended use of the steel composition. MPEP 2111.02 II.

In regards to claim 21, Ishizaki et al. ('209) disclose wherein less than 1 weight percent or less chromium would be added to the steel (col. 2, lines 20-60).

With respect to the compositional formula in claim 21 "wherein Pcm represented by the following equation (2) is 0.17 or less: Pcm = (%C) + (%Si)/30 + ((%Mn) +(%Cu) + (%Cr))/20 + (%Ni)/60 + (%Mo)/7 + (%V)/10 Equation (2)", it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in

the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, Takalatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of carbon, silicon, manganese, copper, chromium, nickel, molybdenum and vanadium would appear to require no more than routine investigation by those ordinary skilled in the ad. In re Austin, et al., 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of carbon, silicon, manganese, copper, chromium, nickel, molybdenum, and vanadium from the steel alloys disclosed by Ishizaki et al. ('209) because Ishizaki et al. ('209) teach the same utility throughout the disclosed ranges.

In regards to claim 27, Ishizaki et al. ('209) disclose finish rolling (finishing) the hot-rolled steel strip (col. 2, line 62 – col. 3, line 17 and claim 1).

Claims 3, 7, 19 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishizaki et al. (US 3,849,209) alone, or alternatively further in view of the ASM Metals Handbook Volume 1.

With respect to the recitation "The coiled, hot-rolled steel strip according to Claim 1; further comprising about 0.005% or less of Ca and/or REM on a mass percent basis." of claims 3 and 19, the Examiner notes that "or less" would include 0 mass percent and that although Ishizaki et al. ('209) do not specify the presence of calcium or rare earth metals, Ishizaki et al. ('209) would still read on the claim.

Alternatively, the ASM Metals Handbook discloses that zirconium, titanium, calcium and rare earth metals would be equivalent in the control of the shape of

manganese sulfide inclusions (page 742, column 1).

Ishizaki et al. ('209) disclose 0 – 0.2 mass percent titanium (col. 2, lines 20-60).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute any portion to all of calcium and/or rare earth metals, as disclosed by the ASM Metals Handbook Volume 1, for the 0 – 0.2 mass percent titanium, as disclosed by Ishizaki et al. ('209) in order to control the shape of manganese sulfide inclusions, as disclosed by the ASM Metals Handbook Volume 1 (page 742, column 1).

In regards to claims 7 and 23, Ishizaki et al. ('209) disclose wherein less than 1 weight percent or less chromium would be added to the steel (col. 2, lines 20-60).

With respect to the compositional formula in claim 23 "wherein Pcm represented by the following equation (2) is 0.17 or less: Pcm = (%C) + (%Si)/30 + ((%Mn) +(%Cu) + (%Cr))/20 + (%Ni)/60 + (%Mo)/7 + (%V)/10 Equation (2)", it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 553 O.G. 177., 57 USPQ 117, Takalatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of carbon, silicon, manganese, copper, chromium, nickel, molybdenum and vanadium would appear to require no more than routine investigation by those ordinary skilled in the ad. In re Austin, et al., 149 USPQ 685,688. It would have been obvious to one of ordinary skill in the art to select the claimed ranges of carbon, silicon, manganese, copper, chromium, nickel, molybdenum, and vanadium from the steel

alloys disclosed by Ishizaki et al. ('209) because Ishizaki et al. ('209) teach the same utility throughout the disclosed ranges.

Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable Over Ishizaki et al. (US 3,849,209) as applied to claims 1 and 17 above, and further in view of Unrath (US 3,241,215).

Ishizaki et al. ('209) disclose a hot rolled steel plate and strip having superior low temperature toughness and weldability that would be coiled (col. 2, lines 20-60 and col. 12, lines 12-16). However, Ishizaki et al. ('209) do not specify forming a pipe.

Unrath ('215) discloses utilizing skelp (strip metal) in coil form and welding the strip in order to form pipes for such uses as high pressure lines, boilers, oil well casing and tubing (col. 1, lines 29-49 and col. 2, line 54 - col. 3, line 44).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the hot rolled steel plate and strip that would be coiled, as disclosed by Ishizaki et al. ('209), and weld the coiled strip to form pipes, as disclosed by Unrath ('215), in order to utilize the steel for high pressure lines, boilers, oil well casing and tubing with expected success, as disclosed by Unrath (col. 1, lines 29-49 and col. 2, line 54 – col. 3, line 44) because Ishizaki et al. ('209) disclose that the steel material would have excellent weldability (col. 1, lines 12-17).

Still regarding claims 25 and 26, the Examiner asserts that the steel of Ishizaki et al. ('209) would be electrically resistant because Ishizaki et al. ('209) disclose substantially the same composition and processing prior to welding as that of the instant

invention. MPEP 2112.01 I.

Response to Arguments

Applicant's arguments filed 22 January 2008 have been fully considered but they are not persuasive.

First, the Applicant primarily seek acceptance of the claim of priority as opposed to the use of that claim of priority. In response, the Examiner acknowledges the Applicant's claim to priority and has indicated this acknowledgment on the attached PTOL-326.

Second, the Applicant primarily argues that Ishizaki et al. ('209) do not disclose that the steel is composed of bainitic ferrite as a primary phase at a context of about 95 percent by volume or more. The Applicant further argues that Ishizaki et al. ('209) state that the process only produces "very fine ferrite grains…and the content of upper bainite in the steel after rolling can also be reduced remarkably." and one skilled in the art would not seek to include bainitic ferrite as a primary phase at a content of about 95 percent by volume or more in the steel of Ishizaki et al. ('209) because Ishizaki et al. ('209) disclose reducing the amount of upper bainite at column 5, lines 12-15. In response, the Examiner notes that that Ishizaki et al. ('209) do not disclose the elimination of upper bainite, but rather only the possibility of the reduction of upper bainite by the recitation at column 5, lines 13-15 "and the content of upper bainite in the steel after rolling *can* also be reduced remarkably" by modifying the degree of reductions during hot rolling. Furthermore, Ishizaki et al. ('209) disclose that the processing of the steel alloy would include heating to a temperature higher than

1200°C; finish rolling at a temperature between Ar_3 and 850°C; and coiling in the temperature range of between 680°C and 500°C, which would be substantially similar to that of the instant invention (col. 2, line 62 - col. 3, line 17 and claims 1 and 3). Therefore, a steel strip composed of bainitic ferrite as a primary phase at a content of about 95 percent by volume or more would be expected. MPEP 2112.01 I.

Third, the Applicant's primarily argues that Ishizaki et al. ('209) disclose that upper bainite is reduced remarkably because upper bainite would weaken the steel and refers to column 2, lines 5-17. In response, the Examiner notes that the lowered toughness that results from a heterogeneous state referred to at column 2, lines 5-17 would be of a microstructure austenite grains with coarse ferrite grains or a microstructure of austenite grains with upper bainite grains and not a ferrite/bainite microstructure. Ishizaki et al. ('209) disclose that the processing of the steel alloy would include heating to a temperature higher than 1200°C; finish rolling at a temperature between Ar_3 and 850°C; and coiling in the temperature range of between 680°C and 500°C, which would be substantially similar to that of the instant invention (col. 2, line 62 - col. 3, line 17 and claims 1 and 3). Therefore, a steel strip composed of bainitic ferrite as a primary phase at a content of about 95 percent by volume or more would be expected. MPEP 2112.01 I.

Fourth, the Applicant primarily argues that Ishizaki et al. ('209) do not specify a high yield strength or CTOD of its steel or that a relatively strong steel is attainable with a particular phase ratio and niobium precipitation ratio as claimed. In response, the Examiner notes that Ishizaki et al. ('209) disclose that one-third of the total added

amount of niobium would precipitate (col. 3, lines 35-63) and the processing disclosed by Ishizaki et al. ('209) can achieve yield points of 57.2 kg/mm^2 (560 MPa) and 59.3 kg/mm^2 (581 MPa) (Table 2). Furthermore, Ishizaki et al. ('209) disclose that the processing of the steel alloy would include heating to a temperature higher than 1200°C; finish rolling at a temperature between Ar_3 and 850°C; and coiling in the temperature range of between 680°C and 500°C, which would be substantially similar to that of the instant invention (col. 2, line 62 - col. 3, line 17 and claims 1 and 3). Therefore, a steel strip composed of bainitic ferrite as a primary phase at a content of about 95 percent by volume or more; a yield strength of at least 560 MPa; and a CTOD value of 0.25 mm or more would be expected. MPEP 2112.01 I.

Fifth, the Applicant primarily argues that one skilled in the art would not seek to combine Unrath ('215) and Ishizaki et al. ('209) because Ishizaki et al. ('209) do not disclose or suggest that the steel can be used in forming ERW pipe and one skilled in the art would not be motivated to make such pipes based on Ishizaki et al. ('209). In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Ishizaki et al. ('209) disclose steel that would have high strength, high toughness and excellent weldability having a

thickness of more than 6 mm (col. 1, lines 11-17) and that the plate or strip would be coiled (col. 2, line 62 - col. 3, line 17). Unrath ('215) discloses utilizing skelp (strip metal) in coil form and welding the strip in order to form pipes for such uses as high pressure lines, boilers, oil well casing and tubing (col. 1, lines 29-49 and col. 2, line 54 - col. 3, line 44). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the hot rolled steel plate and strip that would be coiled, as disclosed by Ishizaki et al. ('209), and weld the coiled strip to form pipes, as disclosed by Unrath ('215), in order to utilize the steel for high pressure lines, boilers, oil well casing and tubing, as disclosed by Unrath (col. 1, lines 29-49 and col. 2, line 54 – col. 3, line 44) with expected success because Ishizaki et al. ('209) disclose that the steel material would have excellent weldability (col. 1, lines 12-17).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 7:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John P. Sheehan/
Primary Examiner, Art Unit 1793

JR